

AMENDMENTS TO THE CLAIMS

Please amend the claims by canceling claims 1, 4, 9, 10 and 18 and adding new claims 19 – 22, as indicated on the following listing of all the claims in the present application after this Amendment.

1 – 4. canceled

5. (previously amended) An improved infrared transceiver system comprising:
a first sensor for detecting infrared signals incident thereon and converting said signals to an electrical current signal;

a gain controller for amplifying said current signals;

a voltage converter for converting said current signals into voltage signals; and

a staged current amplifier in circuit between said gain controller and said voltage converter, said staged current amplifier comprised of at least two amplification stages, each of said stages amplifying said current signals, wherein said gain controller comprises a current mirror in operative connection with said staged current amplifier and further wherein said staged current amplifier comprises:

a first transistor, said first transistor comprising a first drain and a first gate;

a second transistor, said second transistor comprising a second source and a second drain, said second source being in circuit with said first drain;

a third transistor, said third transistor comprising a third gate and a third source, said third gate being in circuit with said second drain; and

a fourth transistor, said fourth transistor comprising a fourth drain and a fourth gate, said fourth drain in circuit with said fourth gate and said first gate.

6. (original) The system of Claim 5, wherein said current mirror is in circuit with said second drain and said third gate.

7. (original) The system of Claim 5, further comprising an output terminal, said output terminal being in circuit with said third source and said fourth drain.

Attorney Docket No.: ZILG.257US0

Application No.: 09/212,203

8. (previously amended) The system of Claim 7, wherein each of said transistors comprises a bias voltage, and wherein said bias voltage is dynamically adjustable in order to operate each of said transistors in a weak inversion range.

/ / /

9 – 13. canceled

14. (previously amended) An improved wireless signal receiver system comprising:

- a first sensor for detecting wireless signals incident thereon and converting said signals to an electrical current signal;

- a gain controller for amplifying said current signals; and

- a voltage converter for converting said current signals into voltage signals;

wherein said gain controller further comprises a staged current amplifier operating in the weak inversion range, and a current mirror in operative connection with said current amplifier; and wherein said current amplifier comprises:

- a first transistor, said first transistor comprising a first drain and a first gate;

- a second transistor, said second transistor comprising a second source and a second drain, said second source being in circuit with said first drain;

- a third transistor, said third transistor comprising a third gate and a third source, said third gate being in circuit with said second drain; and

- a fourth transistor, said fourth transistor comprising a fourth drain and a fourth gate, said fourth drain in circuit with said fourth gate and said first gate.

15. (original) The system of Claim 14, wherein said current mirror is in circuit with said second drain and said third gate.

16. (original) The system of Claim 14, further comprising an output terminal, said output terminal being in circuit with said third source and said fourth drain.

17. (previously amended) The system of Claim 16, wherein each of said transistors comprises a bias voltage, and wherein said bias voltage is dynamically adjustable in order to operate each of said transistors in a weak inversion range.

18. canceled

SLIP 19. (new) A communications receiver, comprising:
a photodiode that outputs an electrical signal to a node with a magnitude related to a level of an infra-red radiation signal incident thereon,
at least one amplification stage with an input connected to said node and having an amplified signal output, and
a feedback stage with an input connected to the output of said at least one amplification stage and an output connected to said node in a manner to reduce an input impedance at said node and increase a bandwidth of said at least one amplification stage.

20. (new) The communications receiver of claim 19, wherein said at least one amplification stage includes at least first and second amplification stages connected in series, the first amplification stage having the input connected to said node and the second amplification stage having the amplified signal output.

21. (new) The communications receiver of claim 20, wherein the second amplification stage is characterized by an absence of any feedback resistor.

22. (new) The communications receiver of claim 20, wherein there is only a noise contribution to the amplified signal output from the first amplification stage.